

**IMPROVED METHOD OF EFFECTIVE TO REAL ADDRESS TRANSLATION FOR
A MULTI-THREADED MICROPROCESSOR**ABSTRACT

The present invention provides a method and apparatus
5 for efficiently translating an effective address (EA) to a
real address (RA) in an Effective to Real Address
Translation (ERAT) table, in a main processing unit (MPU)
having two or more threads. A thread, using an EA,
presents the EA for lookup in the ERAT table. The EA is
10 compared to each entry in the ERAT table. If (i) the EA
matches an entry in the ERAT table, (ii) a valid indicator
in the matching entry indicates it is valid for other
threads but not valid for the thread presenting the EA for
lookup, and (iii) the information in the matching entry is
15 correct for the EA presented for lookup, then the valid
indicator is set to show that the matching entry is valid
for the thread presenting the EA for lookup, in addition to
the other threads.